

zone of the hinge-line, an incipiently developed pseudodeltidium, platelike cardinal process lobes, long divergent socket plates, and a subcircular ventral muscle scar.

*Genotype*.—*Strophonella davidsoni* Høltedahl, 1916 (pp. 64–65, pl. 7, figs. 6, 7).

*Discussion*.—*Strophonella* (*Strophonella*) Hall, 1879 (p. 152), is here restricted to include forms characterized by having no dental plates, a progressively developed pseudodeltidium stout cardinal process lobes, short to obsolescent socket plates and a petaloid ventral muscle scar. These are the essential differences between the two subgenera.

#### *Glossostrophia*, n. gen.

*Exterior*.—Transversely semioval; geniculately resupinate but with a narrow median zone of the geniculate portion projecting dorsally like a tongue. Pseudodeltidium entire with a narrow median fold, chilidium vestigial. Ornamented by fine parvicostellae with strong primaries.

*Ventral interior*.—Hinge-line denticulate for about three-quarters its length. Muscle scar subtriangular in outline, lateral bounding ridges strongly developed posterolaterally.

*Dorsal interior*.—Cardinal process lobes disjunct, socket plates robust, lying adjacent to the cardinal process lobes. Adductor scars suboval, contained laterally by a pair of high short ridges and anteriorly by a pair of low subcircular, elevated areas.

*Genotype*.—*Leptaena caudata* Schnur (1854, p. 224, pl. 42, fig. 4a–c).

*Range*.—Middle Devonian.

*Discussion*.—This genus is erected for a group

of resupinate forms, closely related to the leptostrophid-nervostrophid stock unique among all stropheodontids in possessing the dorsally projecting tongue-like process. One other resupinate group of this stock is known, namely, *Gamphalosis* Stainbrook (1945, p. 33). In addition to the difference cited above, *Gamphalosis* is ornamented in a nervate fashion as opposed to the parvicostellate type of *Glossostrophia*. No internal comparisons are possible because the interiors of *Gamphalosis* are unknown.

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**BOTANY**.—*Three new Carices from Mexico and Guatemala*. FREDERICK J. HERMANN.<sup>1</sup> U. S. Department of Agriculture.

Among an extensive collection of sedges made by Dr. A. J. Sharp in Mexico and Guatemala and an earlier collection made by Dr. C. H. Muller in Chihuahua the following undescribed species were found:

*Carex percostata*, sp. nov. (Multiflorae). Rhizomata crassa, lignea, memnonia, fibrillosa; culmi 3–6 dm alti, obtuse triangulares, infra capitulum scaberuli alibi laeves, foliis multo longiores; folia 3–6, ad basim culmi aggregata, vaginis ventral-

iter paulum ore productis, ligula brevi, lamini planis, rigidis, 1–3 dm longis, 3–4 mm latis, marginibus ad apicem attenuatum scabriusculis; capitulum late oblongum vel ovoideo-oblongum, 2–2.5 cm longum, 1–1.5 cm latum; spicae 7–12 androgynae, aggregatae vel infimae plus minusve disjunctae, ovoideae, perigyniis 5–8 adscendentibus patentibusve parte mascula conspicua; bractae squamiformes vel infima setaceo-producta; squamae ovatae, acutae vel brevispidatae, perigyniis breviores; perigynia inaequaliter biconvexa, oblongo-ovoidea, 4–5 mm longa, 2.25–2.5 mm lata, fulvo-straminea apice brunnea,

<sup>1</sup> Received June 9, 1950.

coriacea, nitentia, utrinque 10-15-costata sulcataque marginibus paulum acutis in rostrum breve serrulatum abrupte attenuatum, ad basim stipitata valde spongiosam contracta; achaenia lenticularia obovata, olivacea, 2.5 mm longa, 2.2 mm lata.

Rootstocks stout, woody, short-creeping, blackish, fibrillose; culms 3-6 dm high, erect, about twice the length of the leaves, bluntly triangular and coarsely ribbed, smooth except below the head where scaberulous, phyllopodic; leaves 3-6 to a fertile culm, clustered near the base, the sheaths hyaline ventrally, scarcely prolonged at the mouth, the ligule short, usually broader than long, the blades flat, stiff, dull green, 1-3 dm long, 3-4 mm wide, the margins roughened toward the long-attenuate apex; head broadly oblong to ovoid-oblong, 2-2.5 cm long, 1-1.5 cm wide, the spikes 7-12, androgynous, aggregated or the lower more or less separate, ovoid, with 5-8 ascending or at length spreading perigynia, the staminate portion prominent; bracts squamiform, the lower one or two generally abruptly setaceous-prolonged; scales ovate, acute or short-cuspidate, narrower than and about the length of the bodies of the perigynia, dirty brown with very narrow hyaline margins and stramineous 1-3-nerved center; perigynia unequally biconvex, oblong-ovoid, 4-5 mm long, 2.25-2.5 mm wide, lustrous, tawny-stramineous the upper half becoming brown, coriaceous, heavily 10-15-ribbed and furrowed on both faces, scarcely sharp-edged, serrulate on the upper third, abruptly tapering into a serrulate, bidentulate, dorsally cleft beak one-fourth the length of the body; the base very spongy and rounded or abruptly tapering to a short stipe; achenes lenticular, obovate, olive-brown, 2.5 mm long, 2.2 mm wide, apiculate; style slender, straight; stigmas 2, slender, straight.

MEXICO: Scattered on wet meadows in open pine forest, 20 miles north of Madera, Municipio de Madera, Chihuahua, September 27, 1939, C. H. Muller 3520 (type, U. S. National Arboretum Herbarium); dried pool in bottom of sink west of Chilpancingo, alt. 6,000 feet, Guerrero, October 20, 1944, A. J. Sharp 441375 (U. S. National Arboretum Herbarium; University of Tennessee Herbarium).

Nearest allied to *Carex marienensis* Stacey (*C. autumnalis* Mack., not Ohwi), a montane species known from the states of México, Oaxaca, Hidalgo, and Chihuahua, and like it maturing unusually late in the season. From this it differs

strikingly in its perigynia which are unequally biconvex rather than planoconvex, larger (4-5 by 2.25-2.5 mm, rather than 3.5-4 by 1.5-2 mm), more abruptly and shorter-beaked (the beak one-fourth rather than one-half the length of the body), scarcely sharp-margined, lustrous and heavily ribbed and sulcate on both faces. The achenes, too, are larger (2.5 by 2.2 mm instead of 2 by 1.5 mm) and darker, the spikes fewer-flowered and with a much more conspicuous staminate portion, the heads shorter and broader and the sheaths not obviously prolonged at the mouth.

*Carex attractodes*, sp. nov. (Granulares). Caespitosa e rhizomatibus modice validis; culmi 1.5-4 dm alti, obtuse triangulares, folia paulum superantes; folia 2-4, laminis 5-25 cm longis, 2-6 mm latis, planis, ad apicem minute scabriusculis; spica terminalis mascula, 6-12 mm longa, 1.2-2 mm lata, brevipedunculata vel subsessilis, squamis oblongis, plus minusve carinatis; spicae femineae 3 vel 4, erectae, lineari-oblongae, 5-14 mm longae, 3-5 mm latae, compacte 10-25-florae, infima pedunculo capillari, bracteis frondosis inflorescentiam superantibus, lamina infima 4-12 cm longa, vaginis longis (usque ad 24 mm); squamis elliptico-lanceolatis, 2 mm longis, hyalinis costa viridi-carinata, perigyniis dimidio brevioribus; perigynia fusiformia, 3-3.3 mm longa, 1.5 mm lata, conspicue multinervia, coriacea, atroviridia, in rostrum breve integrum contracta; achaenia triangularia, obovata, 1.8 mm longa, 1.1 mm lata, stipitata, stylo recto.

More or less caespitose from moderately stout, dark brown, creeping rootstocks; culms 1.5-4 dm high, phyllopodic, slender, flexuous, little exceeding the leaves, bluntly triangular, smooth or minutely scabridulous between the veins; leaves 2-4 to a fertile culm, mostly on the lower third of the culm, the blades flat, erect, 5-25 cm long, 2-6 mm wide, linear, scaberulous toward the apex, the sheaths loose, hyaline and early ruptured ventrally, the ligule prolonged, acuminate, many times longer than wide; staminate spike linear, erect, subsessile and often concealed between the two uppermost pistillate spikes or short-peduncled (peduncle up to 3 mm long), 6-12 mm long, 1.2-2 mm wide, the scales oblong, bluntly acute to minutely cuspidate, 3.5 mm long, appressed-ascending, pale reddish brown with a broad light green, more or less carinate midrib, usually scabridulous toward the apex; pistillate spikes 3 or 4, erect, the lowermost widely separate on a long-exserted, capillary peduncle, the

upper short-peduncled or sessile, linear-oblong, 5–14 mm long, 3–5 mm wide, closely 10–25-flowered, the perigynia ascending; bracts large and leaflike, generally exceeding the inflorescence, the blade of the lowermost 4–12 cm long, the sheaths long (to 24 mm) somewhat prolonged at the mouth and the ligule conspicuous; scales elliptic-lanceolate, acuminate, 2 mm long and about half the length of the perigynia, thin, hyaline and tinged with reddish brown except for the stout, green, carinate midrib; perigynia fusiform, 3–3.3 mm long, 1.5 mm wide, sessile, prominently many-nerved, coriaceous, closely investing the achene, dark green, shading to chestnut-brown at the base, resinous-punctulate, tapering into a short, straight, entire beak; achenes trigonous, broadly obovoid, 1.8 mm long, 1.1 mm wide, brown, granular, tapering to the short-stipitate base, abruptly rounded at the apex, conspicuously straight-apiculate, jointed with the short, slender style; stigmas 3, slender, reddish brown.

MEXICO: Edge of ditch near Lake Jusnajav, alt. 5,500 feet, about 16 km northwest of Comitán, Chiapas, April 29, 1945, *A. J. Sharp 45450* (type, U. S. National Arboretum Herbarium, duplicate in University of Tennessee Herbarium).

No representatives of the section *Granulares* have heretofore been reported south of the United States, although *Carex microdonta* Torr. & Hook. is of frequent occurrence in eastern Texas and occasional in the Trans-Pecos area, and *C. rector* Mack. is known from Alabama and Louisiana. The present species is most closely related to *C. haleana* Olney, which ranges from Quebec and Maine to Saskatchewan, southward to Virginia, Indiana, and Kansas. It is set off from *C. haleana* by its fusiform perigynia (hence the specific epithet), which are longer (3–3.3 mm rather than 2–2.5 mm), notably dark-green, tapering into a more prominent beak and never rounded at the base; by its relatively long pistillate scales (one-half rather than one-fourth the length of the perigynia); and by its stout, creeping rootstocks.

*Carex quichensis*, sp. nov. (*Granulares*). Dense caespitosa e rhizomatibus tenuibus; culmi 1.8–4 dm alti, laeves, obtuse triangulares, foliis breviores; folia 3–5, laminis 9–20 cm longis, 3.5–6 mm latis, planis, marginibus ad apicem scabriusculis; spica terminalis mascula, 14–25 mm longa, 1.5–2 mm lata, pedunculo 3–5 mm longo, squamis elliptico-oblongis, mucronatis, costa laevi; spicae

laterales femineae vel saepe androgynae 3 vel 4, erectae, lineares 20–30 mm longae, 3.5–5 mm latae, 15–30-florae, infima pedunculo capillari, bracteis frondosis inflorescentiam superantibus, lamina infima 15–20 cm longa, vaginis perlongis (usque ad 45 mm); squamis late elliptico-lanceolatis, 3 mm longis, hyalinis costa viridi saepe plus minusve carinata frequenter mucronatis perigynia subaequantibus; perigynia late ellipsoidea vel anguste obovoidea, 3.2 mm longa, 1.3–1.5 mm lata, conspicue multinervia, subcoriacea, olivacea, basi cuneata, in rostrum breve (0.35 mm) rectum subintegrum ore incrassato abrupte contracta; achaenia triangularia, anguste obovoidea, 2 mm longa, 1 mm lata, stipitata, stylo adunco.

Densely caespitose from slender, pale brown rootstocks; culms 1.8–4 dm high, erect, overtopped by the leaves, smooth, bluntly triangular; sterile shoots conspicuously developed; leaves 3–5 to a fertile culm, the blades flat, linear, erect, 9–20 cm long, 3.5–6 mm wide, scaberulous on the margins toward the apex, the lower sheaths loose, hyaline and soon breaking ventrally, the ligule not conspicuously prolonged, blunt, as long or twice as long as wide, 14–25 mm long, 1.5–2 mm wide, terminal spike staminate, linear, erect, 14–25 mm long, 1.5–2 mm wide, borne on a peduncle 3–5 mm long, the scales elliptic oblong, 4 mm long, appressed, hyaline, tinged with reddish brown, the broad dark green, often somewhat carinate, midrib smooth and extended as a mucro; lateral spikes 3 or 4, erect, pistillate or often androgynous, the lowermost widely separate on a capillary peduncle, the upper short-peduncled, linear, 20–30 mm long, 3.5–5 mm wide at maturity, 15–30-flowered, the perigynia appressed-ascending; bracts leaf-like overtopping the inflorescence, the blade of the lowermost 15–20 cm long, the sheaths, except the uppermost, very long (to 45 mm), prolonged at the mouth and with a prominent ligule; scales broadly elliptic-lanceolate, acuminate, 3 mm long, nearly equaling the perigynia, thin and hyaline, the margins streaked with dark red, the midrib stout, green, generally more or less carinate, extending to or prolonged slightly beyond the tip; perigynia broadly ellipsoid to narrowly obovoid, 3.2 mm long, 1.3–1.5 mm wide, sessile, conspicuously many-nerved, subcoriaceous, little inflated, olive-green, tapering at the base, abruptly contracted above into a short (0.35 mm), stout, straight, subentire beak conspicuously thickened at the

mouth; achenes trigonous, narrowly obovoid, 2 mm long, 1 mm wide, stramineous, granular, tapering to the stipitate base, rounded at the apex, bent-apiculate and jointed with the slender style; stigmas 3, short, dark red.

GUATEMALA: Edge of brook above Nebaj; El Quiché, alt. 7,000 feet, February 7, 1945, A. J. Sharp 45144 (type, U. S. National Arboretum Herbarium, duplicate in University of Tennessee Herbarium).

In its long, slender pistillate spikes *Carex quichensis* resembles species of the Mexican and southern Californian section *Longicaules* rather than those of the more northeastern section *Granulares*, but its apparently erect spikes and

its subtire perigynium-beak, which is prominently thickened at the mouth, exclude it from the former group. In section *Granulares* it falls nearest to the only other known Middle American representative of the section, *Carex atractodes*, described above. From this it is readily separated by its densely cespitose habit, slender rootstocks, and short ligule; by its long terminal (14–25 mm rather than 6–12 mm long) and lateral (20–30 mm rather than 5–14 mm long) spikes, the latter often staminate at the apex, and its long pistillate scales, which nearly equal the perigynia; by its abruptly beaked perigynia; and by its sharply bent style-base.

ENTOMOLOGY.—*Two new genera and three new species of Microlepidoptera from Argentina (Gelechiidae).*<sup>1</sup> J. F. GATES CLARKE, Bureau of Entomology and Plant Quarantine.

The microlepidopterous fauna of Argentina is little known, though several enthusiastic workers, Fernando Bourquin and A. Pastrana of Buenos Aires and Kenneth J. Hayward and associates of Tucumán, are engaged in acquiring useful knowledge of the habits and life histories of these insects. This paper is designed to make known three more species and to provide names so that the biologies of these moths can be published.

**Euchionodes**, n. gen.

Figs. 1–1c; 5–5b

*Typus generis.*—*Euchionodes traditionis*, n. sp.

Head with spreading, appressed scales. Antenna simple, without pecten from scape. Labial palpus long, recurved, third segment as long as second; brush of second segment with furrow; third segment compressed, roughened posteriorly with a tuft of elongated scales. Tongue well developed.

Forewing elongate, ovate, 12 veins; 1 b furcate; 1 c absent, 2 distant from 3, 3–5 nearly equidistant; 7 and 8 stalked, both to costa; 11 from middle.

Hind wing slightly broader than forewing, 8 veins; 2 distant from 3, 3 from before angle; 6 and 7 divergent, approximate at base; discocellulars outwardly oblique between 2 and 6; crossvein present between cell and 8.

Hind tibia roughened with long hairlike scales.

*Male genitalia.*—Uncus and gnathos present, the latter a well developed hook.

*Female genitalia.*—Signum present.

This genus is closely related to *Chionodes* Hübner but differs from it by the scale tuft from the third segment of the palpus, vein 2 of forewing is distant from 3, and 3 of hind wing is well separated from 4. The male and female genitalia of both genera are similar and show definite relationship.

**Euchionodes traditionis**, n. sp.

Alar expanse, 13–16 mm.

Labial palpus ochraceous-tawny; second segment with a small fuscous spot outwardly at base and a large, subterminal, triangular fuscous spot outwardly; third segment almost wholly overlaid with fuscous. Antenna fuscous with some ochraceous-tawny scaling basally. Ground color of head, thorax, and forewing buckthorn brown, except face, which is ochraceous-tawny; head and thorax with a more or less well defined median fuscous line; forewing more or less longitudinally streaked with purplish fuscous, but in some specimens the streaking is obsolete; apex and cilia purplish fuscous. Hind wing grayish fuscous; cilia fuscous. Legs ochraceous-tawny strongly overlaid with purplish fuscous. Abdomen fuscous except the median-ventral whitish ochraceous area.

*Male genitalia.*—As figured. Note the greatly reduced harpe.

*Female genitalia.*—As figured. Signum a four lobed plate with two high transverse keels.

*Type.*—U.S.N.M. no. 59422.

<sup>1</sup> Received May 8, 1950.